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becoming at length 5- (or more) septate, constricted near the middle and more or less swollen, .00015'—.02'x.00015'—.0002'.

Nearly allied to *S. Ogilviensis*, B. & Br., but the sporidia are larger and the perithecia not flattened nor collapsed.

On dead leaves of *Mertensia*. American Fork Canyon, Utah. M. E. Jones. July, 1880.

SPHAERIA (LEPTOS.) LEIOSTEGA.—Perithecia gregarious, pustuliform and entirely covered by the cuticle, which is scarcely blackened above them; asci cylindrical; sporidia uniseriate, elliptical, nearly hyaline, 3-septate, .0008'x.00035'—.0004'.

Allied to *S. fuscella*, B. & Br.

On various dead twigs—*Carya*, *Rosa*, *Vaccinium*, etc.

SPHAERIA ECKFELDTII.—Minute, scattered, erumpent, pustuliform, membranaceous, black, at length pierced; asci bag-like, obovate, about .0025'x.001'; sporidia inordinate, oblong, sub-hyaline or fuscous at first, soon becoming brown and 3-septate, .0013'x.0003'.

On bleached wood of *Castanea*, near Philadelphia. January. J. W. Eckfeldt, M.D. (Ellis, *N. A. Fungi*, No. 593.)

MELIOLA MACULOSA.—Forming patches 1-4th inch across, on the under side of the leaf. Perithecia subglobose, perforated above, seated on a mycelium of brown, branching, sparingly-septate, prostrate threads, and surrounded at the base with a few straight black spreading hairs, about equal in length to the diameter of the perithecium; asci sessile, cylindric, .002'x.0004'; sporidia irregularly uniseriate, subhyaline, elliptical or ovate-elliptical, .0004'—.00045'x.0002', uniseptate and constricted at the septum.

On fallen leaves of *Andromeda*(?). June. (*Venturia maculosa*, *N. A. Fungi*, No. 200.)

ASTERINA NIGERRIMA.—Perithecia flattened, minute, .003'—.004' diameter, of a radiate, cellular structure; asci oblong-clavate, sessile, .0013'x.0004'; sporidia crowded, oblong-clavate, slightly curved, nearly hyaline, 4-nucleate, .00045'—.00015'; paraphyses none.

The portion of the stem occupied by the fungus is blackened as if charred.

On old stems of *Erigeron*(?), lying on the ground. October.\*

§ 85. *Helonias bullata*, L., in Morris Co., N. J.—A reliable report that this plant had been gathered by a lady, in a bog near the town of Dover, induced me to hunt for it. My informant, Rev. E. E. Butler, formerly rector of the Episcopal church of that place, and familiar with the vicinage, kindly offered to go with me and act as guide. On the 12th of May we went from Easton to Dover by rail, and drove thence four miles westward, to the village of Succasunna, which lies on a plain of the same name between the mountains, at an elevation of about 600 feet above tide. Passing along its single street from south to north, we stopped at the last house, tied our horse to a tree and followed the road on foot toward an extensive wooded swamp, which it crossed, a little distance beyond. Not a hundred yards from the house, I spied in a fence-corner a leafless shrub bear-

\* In the present and foregoing articles, where no locality is given the species were collected in the vicinity of Newfield, N. J.

ing one opened bunch of rose-colored blossoms. To my surprise it proved to be *Rhododendron Rhodora*, Don. Further search brought us two additional specimens, for it had barely begun to bloom. A week later, the bushes were, no doubt, in their full glory. The portion of the swamp on the left side of the road was first visited. On the damp, shaded ground flourished profusely *Anemone nemorosa*, *Coptis trifolia*, *Polygala paucifolia*, *Aralia trifolia* and *Smilacina bifolia*, but no sign of what we sought could be detected. We then returned to the edge of the swamp, and tried it on the right, or east side of the road. Good fortune favored us, and in less than five minutes we stood in the midst of an acre of *Helonias bullata*. It grows underneath larch-trees (*Larix Americana*, Mx.) in soft, black muck, and its chief associates are *Clintonia borealis* and *Sarracenia purpurea*. Here and there appeared a stout scape, about 2 feet high, capped with its short spike of purplish flowers, and at its base clustered the broadly ovate new leaves beside the oblanceolate and very elongated old ones of last year. Such results from the exploration of a limited area during the brief space of an hour indicate that other interesting species await discovery in that swamp. Mr. Butler, who is a good amateur botanist, also informs me that in the same region there are several other bogs and swamps rich in floral treasures, in one of which *Calla palustris* abounds. On our way back to Dover we observed a hillside covered with a fine growth of *Juniperus communis*.

Easton, Pa.

THOMAS C. PORTER.

§ 86. **Cross-Fertilization in *Cereus phoeniceus*.**—While collecting specimens of the above species in the Burro Mountains, N. M., I noticed a great difference in the flowers on two adjacent plants. In one form the styles were exsert, and the stamens shorter than the petals, while in the other the styles and petals were of about equal length. Naturally, I at first thought this a case of dimorphism, but the following observations convinced me of my error. The long-styled form had broadly spatulate petals of a very bright scarlet-red color, while in the other the petals were narrowly spatulate, and of a darker purplish-red, thus indicating a difference of variety. Although the stigma is not exsert in both forms, yet by the contraction of the withering corolla it shortly becomes so, the corolla dried tightly around the style preventing all access of the pollen to its own stigmas, which up to this time remain tightly closed and probably impotent. The latter fact could not be certainly determined, owing to a lack of material. The plant is very scarce in this immediate vicinity, and when I again visited these few plants no flowers remained. But I have no doubt that such is the case; for up to the time of the inclusion of the anthers (should any pollen remain), the stigmas are not only tightly closed, but hard, dry, and green, and in no case could any pollen be found upon them. The stamens, moreover, before the closing of the corolla, become limp and collapsed. But after this period the stigmas open, and pollen in abundance may be found upon them. Now if, as apparent, this is an arrangement for cross-fertilization, which is equally effected in both the long and short-styled forms, dimorphism is needless.